

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims:

Claims 1-39: (Canceled).

40. (new) A method for dropping a drop channel from a wavelength division multiplexed (WDM) signal including one or more express WDM channels of equal power using a beam separator and controlling the power of an add channel of an optical add-drop multiplexer (OADM) used to add the add channel to the WDM signal, the method comprising:

comparing the power P_{add} of the add channel with the power P_{drop} of the drop channel; and

attenuating the power P_{add} to match the attenuated power $P_{express}$ of the express WDM channels, according to the equation

$$P_{express} = P_{add} - L + 10 \log(1 - y\%) - L_4$$

where

L is an attenuation introduced to P_{add} and controlled by a variable optical attenuator,

L_4 is an insertion loss introduced to P_{add} by a beam combiner when the add channel is added to the WDM signal by the beam combiner,

$y\%$ is a preset portion of P_{add} tapped by a first tap, and

$P_{express}$ is determined by $P_{express} = P_{inp} - L_2 - L_3$, where P_{inp} is the power of each express WDM channel prior to entrance to the OADM, and L_2 and L_3 are the insertion losses introduced to each express WDM channel when each express WDM channel passes through the beam separator and the beam combiner, respectively.

41. (new) The method of Claim 40, wherein the step of comparing includes:

monitoring predetermined portions P_1 of the added channel and P_2 of the drop channel;

comparing the predetermined portions to obtain a result; and

utilizing the result to attenuate P_{add} ,

wherein

P_1 is determined by $P_1 = P_{inp} - L_1 + 10 \log(x\%)$,

P_2 is determined by $P_2 = P_{add} - L + 10 \log(y\%)$,

L_1 is an insertion loss introduced to P_{drop} by the beam separator when the beam separator drops the drop channel, and

$x\%$ is a preset portion of P_{drop} tapped by a second tap.

42. (new) The method of Claim 41, further comprising:

issuing a control signal representative of the result, the step of attenuating including controlling the variable optical attenuator to adjust the attenuation L in accordance with the control signal.